PUBLIC HEALTH REGULATIONS

Department of Health, State of Hawaii

Chapter 38

SEWAGE TREATMENT AND DISPOSAL SYSTEMS

Under and by virtue of the provisions of Chapter 321 and 342, Hawaii Revised Statutes, and all other applicable laws, Chapter 38 of the Public Health Regulations, Department of Health, State of Hawaii, is hereby amended to read as follows:

PURPOSE

The purpose of these regulations is to establish minimum standards governing the design, construction, installation, operation and maintenance of sewage treatment and disposal systems. Such standards are intended to insure that sewage treatment and disposal systems and the wastes discharged therefrom:

(1) do not contaminate or pollute any drinking water supply, or the waters of any bathing beaches, shorewaters, ponds, lakes, streams or shellfish breeding grounds;

(2) are not accessible to insects, rodents, or other possible carriers of disease;

(3) do not give rise to being nuisances by reason of odor or unsightly appearance;

(4) do not become hazards to the public health and safety.

Section 1. DEFINITIONS

"*Building*" means a structure built, erected and framed of component structural parts designed for the housing, shelter, work place, enclosure or support of persons, animals or property of any kind.

"*Cesspool*" means an excavation in the ground which receives the untreated discharges of a drainage system or part thereof and is designed to retain the organic matter and solids discharging therein but permitting the liquids to seep through the bottom or sides.

"*County Government*" means the governmental organization of any county or city and county of the State of Hawaii.

"*Director*" means the Director of Health of the State of Hawaii or his duly authorized agent or inspector.

"*Domestic Sewage*" means the waterborne wastes derived from the ordinary living processes and of such character as to permit satisfactory disposal, without special treatment, into the public sewer, a private sewer or by means of a private sewage disposal system.

"*Drainage System*" means all the piping within public or private premises, which conveys sewage or other liquid wastes to an approved point of disposal, but does not include the mains of a public sewer system or a public sewage treatment or disposal plant.

"*Dwelling*" means any building which is wholly or partly used or intended to be used for living or sleeping by human occupants and includes hotels, apartment houses and lodging houses.

"*Dwelling Unit*" means any habitable room or group of habitable rooms located within a dwelling and forming a single habitable unit.

"*Individual Household Aerobic Treatment Unit or Aerobic Treatment Unit*" means a water-tight receptacle which receives the discharge of domestic sewage, and is constructed so as to retain solids, digest organic matter through a period of detention and aeration and allow the aerated effluent to discharge outside the tank into a subsurface disposal field or seepage pit.

"*Injection Well*" means a driven or drilled shaft into the ground which receives the discharge from a treatment works or individual household aerobic treatment unit and is designed to permit the effluent to gain access into any underground formation.

"*Nearshore Waters; Class AA; Class A; Class B; and Class 2*" shall have the same meaning and use as provided in Public Health Regulations, Chapter 37-A, Water Quality Standards.

"*Private Sewage Disposal System*" means an individual household treatment unit such as a cesspool, a septic tank or an individual household aerobic treatment unit with the effluent discharging into a subsurface disposal field, one or more injection wells and/or one or more seepage pits.

"*Private Sewer*" means a common sewer privately owned and not directly controlled by public authority.

"*Privy*" means a structure and excavation for the disposal of human excreta by non-water carriage methods.

"*Public Sewer*" means a common sewer directly controlled by public authority.

"*Seepage Pit*" means an excavation in the ground which receives the discharge of aerobic sewage disposal systems or septic tanks and is designed to permit the effluent to seep through its bottom or sides.

"*Septic Tank*" means a water-tight receptacle which receives the discharge of domestic sewage, designed and constructed so as to retain solids, digest organic matter through a period of detention and allow the liquids to discharge outside the tank into a subsurface disposal field or one or more seepage pits.

"*Sewage*" means any liquid waste containing animal or vegetable matter in suspension or solution and may include liquids containing chemicals in solution.

"*Treatment Works*" means the various devices used in the treatment of sewage including the necessary intercepting sewers, outfall sewers or outlets, pumping power and other equipment and their appurtenances.

Section 2. EFFECT OF COUNTY GOVERNMENT ORDINANCES

A. When a county government has adopted an ordinance governing private sewage disposal systems, and the provisions of the ordinance and the method of enforcement by the county government are approved in writing by the Director, said ordinance, and not these regulations, shall control the matter of private sewage disposal systems in such county.

Section 3. GENERAL REQUIREMENTS

A. A building shall not be used as a dwelling, a public building, a commercial building, an

industrial building, or a place of assembly, unless such building is provided with adequate sanitary facilities and is accessible to a public or private sewer or to a private sewage disposal system meeting the requirements of this chapter.

B. No private or public treatment works or private sewage disposal system shall be constructed unless the plans and specifications thereof are submitted to and approved in writing by the Director.

C. No private or public treatment works shall be constructed unless a maintenance schedule thereof is submitted to and approved in writing by the Director.

D. No private or public treatment works or private sewage disposal system shall be placed in operation until it has been inspected and approved in writing by the Director.

E. A privy, where permitted by the Director, shall be constructed and maintained fly-proof and rat-proof, shall be properly vented and shall have substantial, watertight curb.

F. Any type of private sewage disposal system acceptable to the Director may be utilized in an area zoned agriculture provided there is not more than one dwelling unit per acre.

G. Private sewage disposal systems shall be limited to a dwelling with two (2) or less dwelling units and in no case shall be used for a development of a density greater than eight (8) dwelling units per acre, in which case their application shall be limited to any combination of two (2) or less dwelling units, and shall be designed, constructed and operated in accordance with the provisions of sections 4, 5 and 6 of this chapter.

H. Whenever any private sewage disposal system is found by the Director to create or contribute to any dangerous or unsanitary condition which may involve health hazards or deviates from the plans and specifications approved by the Director, the owner shall install such additional facilities or make such repairs or alterations as ordered by the Director and such repairs or alterations shall be completed and placed into operation within thirty (30) days after the order is issued. Any and all buildings connected to the private sewage disposal system under order for correction, and unused on the day the order is issued shall not be used as a dwelling until the order is complied with and approved in writing by the Director. In the event that the order is not complied with to the satisfaction of the Director within the period allowed, any and all buildings connected to the private sewage disposal system under order for correction and used on the day of the order shall be evacuated on or before the 31st day following the issuance of the order.

I. Whenever the use of any cesspool or seepage pit has been abandoned or discontinued, the owner of the real property on which such cesspool or seepage pit is located shall render it safe by filling it completely with earth, sand, gravel, rubble, or other similar material; provided, however, if such cesspool or seepage pit is found by the Director to be in a structurally sound condition it may be rendered safe by sealing the manhole cover with a layer of concrete at least four (4) inches thick and extending at least four (4) inches beyond the perimeter of the manhole. For the purpose of this subsection, the term "*owner*" includes the fee simple owner and any lessee of the real property holding the same under a lease for a total term of five years or more.

J. The kind of sewage treatment and disposal system that shall be provided for dwellings other than those specified under Section 3.G, for commercial or industrial buildings or developments, for public buildings or for places of assembly shall be determined by the Director and whenever applicable shall conform to the requirements provided in section 7 and section 8 of this chapter.

Section 4. PRIVATE SEWAGE DISPOSAL SYSTEMS–WHERE PERMITTED

A. In unsewered areas in the City and County of Honolulu and the Counties of Hawaii, Maui and Kauai no private sewage disposal systems shall be so located or constructed as to contaminate underground potable waters, shore waters, ponds, lakes, streams, bathing beaches or shellfish breeding grounds. Percolation tests to determine specific capacity and permeability may be required by the Director to determine the type of permissible private sewage disposal system.

Section 5. SPACING OF PRIVATE SEWAGE DISPOSAL SYSTEMS

A. No private sewage disposal system shall be located at any point having less than the minimum distances indicated in Table I unless otherwise approved by the Director.

TABLE I

Minimum Horizontal Distance From	TO EDGE OF: Cesspool (Ft)	Septic Tank (Ft)	Seepage Pit (Ft)	Sub-Surface Disposal Field (Ft)	Private Aerobic Treatment Unit (Ft)	Injection Well (Ft)
Wall line of any roof structure or building	10	5	5	5	5	
Property line	9	5	9	5	5	
Water supply well	50	50	50	50	50	50
Stream, the ocean at mean sea level, pond, lake	50	50	50	50	50	50
Large trees	10	5	10	10	5	
Seepage pit	18		12	5		
Cesspool	18		18	5		

Section 6. MINIMUM REQUIREMENTS

A. Cesspools

1. Each cesspool shall be at least six (6) feet in diameter, clear opening, and should have a minimum sidewall of at least ten (10) feet below the inlet pipe, provided, however, that when a stratum of gravel or equally pervious material of at least four (4) feet in thickness is found, or a lava tube is encountered which provides adequate drainage, the depth of such sidewall may be reduced. The ultimate depth required shall be determined by the Director based on actual soil materials encountered on the site. Multiple cesspools, three (3) diameters apart from outer edges, may be used. Sidewall depth reduction may be allowed when multiple cesspools are utilized.

2. Cesspool sidewalls shall be properly protected against cave-in by means of approved types of concrete rings, hollow tile blocks or other approved materials.

   Where natural geological formations are encountered which are sufficiently stable to prevent caving of sidewalls, such as rock, white coral, clay or other similar composition, the stable material may be used as a sidewall lining.

3. A structurally sound concrete cover protruding at least six (6) inches beyond the perimeter of the cesspool and resting on firm ground shall be provided. The top of such cover shall be at least twelve (12) inches below the finished ground surface. At least one (1) covered manhole twelve (12) inches in minimum dimension must be provided in the cesspool cover for inspection, rodding or for emptying of the contents when required.

B. Septic Tank System

1. Where a septic tank is followed by a subsurface disposal field, the lot size shall be at least 15,000 sq. ft. in area and the lot topography shall permit the construction of an operable subsurface disposal field with the required absorption area.

2. Liquid capacity of septic tanks at the time of construction shall conform to Table II.

3. a. Subsurface disposal trenches or fields shall be constructed of clay field tile approximately twelve (12) inches in length and not less than four (4) inches in diameter,

laid with one-half (½) inch open joints extending around the bottom half of the pipe. Other types of drain lines may be used when acceptable to the Director. All bends used in the disposal field shall have one (1) tight joint to each end of the bend.

b. Before drain lines are laid, crushed stone, gravel, slag or similar filter materials acceptable to the Director and having adequate voids varying in size from three-quarter (¾) to two and one-half (2½) inches, shall be placed on the trench to the depth and grade required by this section. After drain lines have been placed, the upper half of each open joint shall be covered with roofing felt and the level of the filter material raised no higher than the center line of the drain before inspection. Drain lines shall be completely encased in filter material only after approval by the Director; untreated building paper, straw or similar material then shall be placed over the filter bed to prevent closure of voids with earth backfill.

c. Subsurface disposal trenches or fields shall be constructed as follows:

Minimum number of drain lines per field – 1
Maximum length of each line – 100 feet
Minimum bottom width of trench – 18 inches
Maximum bottom width of trench – 36 inches
Minimum spacing of lines center to center – 6 feet
Minimum depth of each cover over lines – 12 inches
Preferred depth of cover of lines – 18 inches
Maximum grade of lines – 6 inches per 100 feet
Minimum grade of lines – 3 inches per 100 feet
Minimum filter material under drain lines – 12 inches
Minimum filter material over drain lines – 2 inches
Minimum spacing between trenches or leaching beds:
shall be four (4) feet plus two (2) feet for each additional foot of depth in excess of one (1) foot below the bottom of the drain line.

d. Where not otherwise specified, the construction and design of a septic tank and subsurface tile system shall conform to the Manual of Septic Tank Practice, U.S. Public Health Service, Publication No. 526.

4. A seepage pit shall not be less than four (4) feet in diameter and not less than ten (10) feet in depth or three (3) times the volume of the septic tank, whichever is greater. Multiple seepage pits, three (3) diameters apart from outer edges, but not less than twelve (12) feet apart, may be used to fulfill the minimum volume required with corresponding adjustment in depth. All seepage pits shall conform to the construction requirements for cesspools as set forth in section 6.A, 2 and 3, of these regulations.

5. Injection well disposal systems shall be designed on the basis of peak flow. Minimum diameter of injection wells shall be four (4) inches. Multiple injection wells shall be spaced no closer than fifty (50) feet from each other. Injection wells shall be constructed to prevent air entrainment and cased to depths as approved by the Director.

TABLE II

LIQUID CAPACITY OF SEPTIC TANKS (GALLONS)

No. of Bedrooms	Minimum Tank Capacity
2 or less	750
3	1000
4	1200
5 or more	1350 gallons + 150 gallons for each additional bedroom.

C. Individual Household Aerobic Treatment Unit

1. Individual household aerobic treatment units must be approved by the Director. Such approval shall be based upon the "Criteria for Evaluation and Testing" as set forth in Publication 586, issued by the National Academy of Sciences–National Research Council, Washington, D.C., entitled "*REPORT ON INDIVIDUAL HOUSEHOLD*

AEROBIC SEWAGE TREATMENT SYSTEM", 1958. In addition, performance data shall be submitted to the Director for an operating unit which is representative of the device. Such performance data shall have been obtained by an agency such as a university or research laboratory acceptable to the Director or from the National Sanitation Foundation (NSF) Testing Laboratory, Ann Arbor, Michigan.

2. Each individual household aerobic treatment unit shall discharge its effluent into a seepage pit or pits, which shall be not less than four (4) feet in diameter and not less than ten (10) feet in depth or three (3) times the volume of the aeration compartment, whichever is greater. Multiple seepage pits, three (3) diameters apart from outer edges may be used to fulfill the minimum volume required with corresponding adjustment in depth. All seepage pits shall conform to the construction requirements for cesspools as set forth in Section 6.A, 2 and 3, of these regulations. In rocky or other poor drainage areas, or in areas with high water tables, subsurface disposal fields or injection wells shall be required in lieu of seepage pits.

3. The capacity of individual household aerobic treatment units, except when used for a dwelling which contains a single dwelling unit, shall be computed on the basis of the five-day Biochemical Oxygen Demand loading and flow of at least 200 gallons per bedroom per day. The design of such aerobic treatment units must be approved by the Director.

D. The provisions of section 7 of this chapter are not applicable to private sewage disposal systems as specfied in this section.

Section 7. EFFLUENT REQUIREMENTS APPLICABLE TO TREATMENT WORKS

A. Outlets discharging into Class 2, Class B or nearshore Class A waters (based on monthly averages):

1. *Biochemical Oxygen Demand, mg/l:* Not greater than 5 and not to exceed 25 lb./day
2. *Suspended Solids, mg/l:* Not greater than 5 and not to exceed 25 lb./day
3. *Total Phosphorus, mg/l:* Not greater than 1 and not to exceed 5 lb./day
4. *Total Nitrogen, mg/l as Total N:* Not greater than 10 and not to exceed 50 lb./day
5. *Fecal Coliform Bacteria, MPN/100 ml:* Not greater than 2.2
6. *pH:* Not less than 6.5 nor greater than 8.5
7. *Dissolved Oxygen, mg/l:* Not less than 5
8. *Temperature, °C:* Not less than 18 nor greater than 28
9. *Radionuclides:* Not to exceed concentrations specified by the U.S. Public Health Service, Publication No. 956, as revised in 1962, as acceptable for drinking water.

Provided, that in the case where it has been affirmatively demonstrated to the Director that the effluent discharged into Class 2 Waters is subsequently reused for irrigation purposes on a substantially complete basis, the Director may waive the requirements of this paragraph completely and may make the effluent requirements indicated under Section 7.B, applicable.

B. Outlets discharging into off-shore Class A Waters or connected to effluent reuse system for irrigation purposes:

1. Substantially complete removal of all floatable and settleable material;
2. Removal of not less than 85 per cent of five-day biochemical oxygen demand or equivalent based on monthly averages;

3. Substantially complete removal of pathogenic micro-organisms on a continuous basis; and

4. In the case of an outlet which will result in the discharge into open ocean waters through an ocean outfall the Director may waive the requirements of subparagraph "2" of this paragraph and may modify the requirement relative to "on a continuous basis" of subparagraph "3" if he determines that such discharges will not adversely affect the open ocean environment and adjoining nearshore waters.

C. Outlets connected to seepage pits or injection wells located on land adjacent to Class AA Waters (based on monthly averages):

1. *Biochemical Oxygen Demand, mg/l:* Not greater than 5 and not to exceed 25 lb./day

2. *Suspended Solids, mg/l:* Not greater than 5 and not to exceed 25 lb./day

3. *Total Phosphorus, mg/l:* Not greater than 1 and not to exceed 5 lb./day

4. *Total Nitrogen, mg/l as N:* Not greater than 10 and not to exceed 50 lb./day

5. *Fecal Coliform Bacteria, MPN/100 ml:* Not greater than 2.2

6. *pH:* Not less than 6.5 nor greater than 8.5

7. *Radionuclides:* Not to exceed concentrations specified by the U.S. Public Health Service, Publication No. 956, as revised in 1962, as acceptable for drinking water.

Provided that in the case where it has been affirmatively demonstrated to the Director that the discharge entering such pit, pits, well or wells does not enter the Class AA Waters and otherwise adversely affect neighboring coastal waters, the Director may waive the requirements of this paragraph completely and may make the effluent requirements indicated under Section 7.B applicable.

D. Outlets connected to seepage pits or injection wells located on lands adjacent to Class 2, Class B or Nearshore Class A Waters:

1. Substantially complete removal of all floatable and settleable materials;

2. Removal of not less than 85 per cent of five-day biochemical oxygen demand or equivalent based on monthly averages;

3. Substantially complete removal of pathogenic micro-organisms on a continuous basis; and

4. In the case where it has been affirmatively demonstrated to the Director that the discharge entering such pit, pits, well or wells does not enter and adversely affect the adjoining waters, the Director may waive the requirements of subparagraph "3" of this paragraph.

Section 8. MINIMUM REQUIREMENTS – TREATMENT WORKS

In areas not served by public sewers minimum requirements are presented herewith:

A. Aerobic Treatment Unit

1. Facilities for measuring and preferably recording the volume of sewage shall be included in any treatment unit.

2. A standby power source shall be provided where the temporary discharge of raw or partially treated sewage may be reasonably expected to endanger the public health or cause serious damage.

3. Aerobic treatment units shall be approved by the Director as prescribed under Section 6 Paragraph C1. In addition, an operating manual including replacement parts information shall be submitted to the Director.

4. On-site aerobic treatment units shall be designed on the basis of at least 200 gallons per bedroom per day per dwelling.

B. Fencing or Enclosure

Must be provided around each plant to discourage trespassers, accidents, drowning, etc. Fence or enclosure must be at least six (6) feet high and at least ten (10) feet from the plant structure. In the case of plants located underground, adequate identification shall be provided in lieu of fencing or enclosure.

C. Buffer Distance

At least twenty-five (25) feet from the nearest business or residential lot line on all sides of the plant. Greater distance may be required depending on the character of adjacent areas.

D. Landscaping

The area inside the fence surrounding the plant shall be free from debris. Vegetation shall be controlled so as to allow free and easy access to the treatment units.

E. Sludge Disposal

Consideration shall be given to prevent pollution of ground and surface water. Adequate isolation shall be provided to avoid nuisance production.

F. Injection well disposal systems shall be designed on the basis of peak flow. Minimum diameter of injection wells shall be four (4) inches. Multiple injection wells shall be spaced no closer than fifty (50) feet from each other. Injection wells shall be constructed to prevent air entrainment and cased to depths as approved by the Director.

Section 9. VIOLATIONS

Any person who violates any provision of this chapter shall be subject to the provisions for violations as provided for in chapter 342, HRS.

Section 10. SEVERABILITY

If any provision of this chapter, or the application of any provision of this chapter to any person or circumstance, is held invalid, the application of such provision to other persons or circumstances, and the remainder of this chapter, shall not be affected thereby.

I, Walter B. Quisenberry, M.D., Director of Health, State of Hawaii, hereby certify that the foregoing regulations were adopted by the Department of Health on the 27th day of April, 1973.

WALTER B. QUISENBERRY, M.D.
Director of Health

The foregoing regulations are hereby approved as to form this 2nd day of May, 1973.

NELSON CHANG
Deputy Attorney General

The foregoing regulations are hereby approved this 22nd day of May, 1973.

JOHN A. BURNS
Governor of Hawaii

These amendments to Chapter 38, Sewage Treatment and Disposal Systems of the State Public Health Regulations were adopted on April 27, 1973, following a public hearing held on March 16, 1973 after public notice was published in the *Honolulu Advertiser* and the *Honolulu Star-Bulletin* on February 22, 1973.

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